

ABSTRACT

TOPIC OF THE STUDY: TO COMPARE THE TRANSLUCENCY OF ZIRCONIA BASED CERAMICS WITH DIFFERENT CORE AND VENEER THICKNESS COMBINATION – AN *IN VITRO* STUDY

Objectives

- * To study the influence of core & veneer thickness on the translucency of zirconia based ceramics.
- * To study the effect of core & veneer thickness on color matching of zirconia based ceramics.

Materials and Methods:

In this study a total of 45 zirconia disc specimen (n=15) were fabricated with different core and veneer thickness and evaluated the translucency of zirconia disc, with vita easy shade spectrophotometer. To study the translucency of these zirconia disc on stained teeth with different test solution, six groups of test solution was used. The need for greater translucency or masking ability was identified according to the thickness of the core foundation material.

Results: The translucency of the restoration is best when there is a minimum thickness of (0.5mm+1.00mm) core and veneer is used. The color masking ability of the zirconia disc is superior for Orange II test solution followed by Alizarin red test solution and Tea test solution.

Conclusion: The translucency of zirconia ceramics is determined by the specific microstructure of the material. For an overall restoration thickness of 1.5mm, the change in the thickness of zirconia based ceramic veneer is a major factor in determining the translucency of the restoration.

The optical property of zirconia restorations helps clinicians to achieve better esthetic than with metal-ceramic restorations. This optical property of the restoration material is compromised when used for metal post and core, a discolored substrate, or a titanium implant abutment, to avoid this compromised esthetic situation the zirconia coping or a sufficient veneered porcelain can be used.

Keyword: Zirconia ceramics, Translucency, Thickness.